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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/082,960	05/22/1998	ANN M. WOLLRATH	06502.0111-0	3411

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EXAMINER
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LAO, SUE X

ART UNIT	PAPER NUMBER
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2194

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/082,960	<b>Applicant(s)</b> WOLLRATH ET AL.	
	<b>Examiner</b> Sue Lao	<b>Art Unit</b> 2126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96 and 98-105 is/are pending in the application.
- 4a) Of the above claim(s) 45-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34-41, 53-61, 64-68, 70-75, 77-82, 84-89, 91-96 and 98-105 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/7/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

*Handwritten mark*

### DETAILED ACTION

1. Claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 are pending, of which claims 44-52 are withdrawn from consideration. This action is in response to applicant's response filed 5/17/2004.

2. The finality of the rejection of the last Office action is withdrawn.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The language of independent claims 34, 53, 54, 64, 71, 78, 85, 92 and 99 raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a useful, concrete and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Independent claims 34, 53, 54, 64, 71, 78, 85, 92 and 99 do not appear to require any computer hardware to implement the claimed invention. These claims appear to define the metes and bounds of an invention comprised of software alone. There is no support (i.e., explicitly claimed computer hardware) in the body of the claims. The systems of claims 53, 92 and 99 appear to be systems comprised entirely of software. Software alone, without a machine, is incapable of transforming any physical subject matter by chemical, electrical, or mechanical acts. If the "acts" of a

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claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. In re Schrader, 22 F.3d 290 at 294-95, 30 USPQ2d 1455 at 1458-59 (Fed. Cir. 1994). Transformation of data by a machine constitutes statutory subject matter if the claimed invention as a whole accomplishes a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d 1368, 1373, 47 USPQ2d 1596 at 1600-02 (Fed. Cir. 1998). MPEP 2106. State Street required transformation of data by a machine before it applied the "useful, concrete, and tangible test." However, State Street does not hold that a "useful, concrete and tangible result" alone, without a machine, is sufficient for statutory subject matter. State Street, 149 F.3d at 1373, 47 USPQ2d at 1601.

Claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 are rejected under 35 U.S.C. 101 because the claimed invention, appearing to be comprised of software alone without claiming associated computer hardware required for execution, is not supported by either a specific and substantial asserted utility (i.e., transformation of data) or a well established utility (i.e., a practical application).

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

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7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are computer hardware necessary to execute the claimed software and render the invention operative.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. (1) Claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 are rejected under the judicially created doctrine of obviousness - type double patenting as being unpatentable over claims 1-33 of the allowed U.S. patent application 08/636,706 (the patent number is not yet available as of the date of this office action). Although the conflicting claims are not identical, they are not patentably distinct from each other. In

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particular, obtaining stub code/instance from a second computing machine/second data processing system of the present claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 is met by the stub retriever and stub loader of claims 1-33 of the allowed U.S. patent application 08/636,706.

9. (2) Claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 are rejected under the judicially created doctrine of obviousness - type double patenting as being unpatentable over claims 1-28 of U.S. Patent 5,999,988. Although the conflicting claims are not identical, they are not patentably distinct from each other. In particular, obtaining stub code/instance from a second computing machine/second data processing system of the present claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 is met by the providing the first virtual machine with an instance of the stub class of claims 1-28 of U.S. Patent 5,999,988 (see, for example, claim 1, lines 12-20).

9. (3) Claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 are rejected under the judicially created doctrine of obviousness - type double patenting as being unpatentable over claims 1-20 of U.S. Patent 6,654,793. Although the conflicting claims are not identical, they are not patentably distinct from each other. In particular, obtaining stub code/instance from a second computing machine/second data processing system of the present claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-105 is met by the client retrieving, during run-time, a stub class instance from the server of U.S. Patent 6,654,793 (see, for example, claim 1, lines 9-10; claim 6, lines 9-10; claim 19, lines 8-9).

10. Claims 34, 39-41, 53, 54, 59-61, 64, 66, 68, 70, 71, 73, 75, 77, 78, 80, 82, 84, 85, 87, 89, 91, 92, 94, 96, 98, 99, 101, 103-105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaines (U S Pat. 5,961,582) in view of Madduri (U S Pat. 5,764,982).

As to claims 34 and 54, Gaines teaches a method in a data processing system (distributed execution environment 301, fig. 3A and fig. 1) having a first program (virtual application on each server host computer 101 such as first server host) containing code (transferable program 302 including elements of user interface 203) and having a second program (virtual application on each server host computer 101 such as second server host), the method comprising the steps of: providing a first abstract computing

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machine (virtual operating system 141 executing on each/first server host 101) to the data processing system; providing a second abstract computing machine (virtual operating system 141 executing on each/second server host 101, another/separate instance of virtual operating system 141) to the data processing system; running the first program on the first abstract computing machine (execute virtual application / execute transferable program 302 on first server host); running the second program on the second abstract computing machine (execute virtual application / execute transferable program 302 on second server host); sending (transfer) a portion of the code (transferable program 302 including elements of user interface 203) from the first program to the second program (from first to second server hosts); and running the portion of the code by the second program on the second abstract computing machine (execute program 302 at second server host). See col. 6, lines 22-46; col. 12, line 50 - col. 14, line 65; in particular, col. 14, lines 15-27.

While Gaines teaches stubs enabling communications (transferable program represents name of / designates / redirects to a remote actual program, col. 13, lines 40-47, col. 14, lines 15-27), Gaines does not teach the sending is based on stub code obtained from the second abstract computing machine.

Madduri teaches communication between two distributed programs (peer to peer communication with client-server tools), wherein stub code is obtained from a remote location (client stubs replicated to the second system / throughout the network, and linked with client portion). See col. 5, line 49 - col. 6, line 24. The stubs enables the communication (remote procedure calls, Madduri, col. 6, lines 46-67). Given the teaching of Madduri, it would have been obvious to send the portion of code based on stub code obtained from the second abstract computing machine / remote location. One of ordinary skill in the art would have been motivated to combine the teachings of Gaines and Madduri because this would have automated the generation of the communication interfaces, leading to fewer errors (Madduri, col. 2, lines 13-15, 24-26), which, to one of ordinary skill in the art, would have been desirable given the heterogeneous nature of the system of Gaines.

As to claims 39 and 59, Gaines teaches first/second computer system with a first/second processor (multiple host machines 101 in fig. 3A, each executing the virtual OS 141 on a processor, fig. 1), the second program has second code (transferable program 302 including user interface 203 transferred to and executing on each server host), receiving the first/second code by the first/second abstract computing machine (process control filter 151 for interprocess communication between first and second hosts); converting (translate) the first/second code into a format suitable to the first/second processor by the first/second abstract computing machine (translate virtual request to request for actual resources); executing the first/second code in the format suitable to (use actual resource such as file system 105). See col. 6, lines 29-36, 42-46; col. 7, lines 15-30; fig. 1.

As to claims 40 and 60, Gaines teaches providing the first/second abstract computing machine to the first/second computer system (multiple host machines 101 in fig. 3A, each executing the virtual OS 141). See col. 12, line 50 - col. 14, line 65.

As to claims 41 and 61, Gaines teaches in a same manner (run programs in a host independent manner, relatively uniform environment in which program executes). See col. 4, lines 14-19; col. 5, lines 14-18.

As to claim 53, note the discussions of claims 34 and 41.

As to claims 64, 78, 92, it is covered by claim 34 except that the stub code being a stub class instance. Note discussion of claim 34 and the equivalence of executing/running. Gaines further teaches first/second computing environments (host machines 101, fig. 3A, or virtual OSeS thereon). Gaines as modified by Madduri teaches returning results (remote procedure calls, Madduri, col. 6, lines 46-67). Regarding the stub code being a stub class instance, Madduri teaches implementing the communication interface system in object-oriented languages (col. 13, lines 53-60), therefore, it would have been obvious to implement the stub code in an object-oriented language, ie, with a stub class instance. Note discussion of claim 34 for a motivation to combine.

As to claims 66, 73, 80, 87, 94, 101, Gaines as modified teaches function and parameter (remote procedure calls, Madduri, col. 6, lines 46-67).



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As to claims 68, 75, 82, 89, 96, 103, the system of Gaines is a runtime system.

As to claim 104, Gaines as modified teaches (Madduri) the stub code / class instance is included in a second computing environment (replicate client stubs to the second system / throughout the network, col. 5, line 49 - col. 6, line 24). Note discussion of claim 64 for object-oriented implementation of stub code / stub class instance.

As to claims 70, 77, 84, 91, 98, 105, Gaines teaches returning results (error message, col. 8, lines 1-3).

As to claims 71, 85, 99, note discussion of claim 64 and Gaines further teaches receiving (fig. 3A).

11. Claims 35-38, 55-58, 65, 67, 72, 74, 79, 81, 86, 88, 93, 95, 100, 102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaines in view of Madduri as applied to claims 34 and 54 and further in view of Priven et al (U S Pat. 5, 327,559).

As to claims 35 and 55, Priven teaches sending an object (CIP object 702) containing a portion of code (action 706) of one program to another program for remote execution in a distributed execution environment. See fig. 7A and denoting text. Given the teaching of Priven, it would have been obvious to send an object containing the portion of the code to the second program. In so doing, the platform-independence of messaging in Gaines would have been enhanced by the self-describing nature of the message format of Priven (col.12, lines 34-47).

As to claims 36 and 56, Gaines as modified teaches (Priven) sending data (parameters 708) for remote execution. See fig. 7A and denoting text. Note discussion of claim 35 for a motivation to combine.

As to claims 37, 38, 57 and 58, Gaines teaches the second/first program has a function (program 302 in each server host computer 101), invoking the function by the first/second program (for execution on a server host computer 101). See col. 14, lines 15-27; fig. 3A, 3B. Priven teaches that, between two distributed programs, code (action 114) is part of an object (CIP object 702), passing the object as a parameter to a function (remote processing by application 1116). See fig. 7A; col. 8, lines 12-24; col. 10, lines 6-25. Note discussion of claim 35 for a motivation to combine. In view of the

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teachings of communications (client-server, ie, request-response models) of Madduri and Priven (setting up peer to peer communication interfaces by replicating client / server stubs to the second system / network, col. 5, line 49 - col. 6, line 24, col. 6, lines 45-67), returning (response) the object/code as a result of invocation (request) would have been obvious.

As to claims 65, 72, 79, 86, 93, 100, note discussion of claim 35.

As to claims 67, 74, 81, 88, 95, 102, note discussion of claims 38 and 66.

12. Applicant's arguments filed 5/17/2004 have been considered but are moot in view of the new ground(s) of rejection.

Madduri is cited to teach that stub code enabling inter-program remote communication is obtained from a remote location (replicate client stubs to the second system / throughout the network, and link with client portion, col. 5, line 49 - col. 6, line 24).

Regarding applicant's argument that Gaines does not teach sending a portion of code based on stub code obtained from the second abstract computing machine. (remarks, page 11). The examiner's response is that it is the combination of Gaines and Madduri that meets sending a portion of code based on stub code obtained from the second abstract computing machine. As discussed in detail in the rejection of claim 34, Gaines teaches sending (transfer) a portion of the code (transferable program 302 including elements of user interface 203) from the first program to the second program (from first to second server hosts); and Madduri teaches communication between two programs, wherein stub code enabling the communication is obtained from a remote location (replicate client stubs to the second system / throughout the network, and link with client portion, col. 5, line 49 - col. 6, line 24). The combination of Gaines and Madduri provides sending a portion of code based on stub code obtained from the second abstract computing machine.

As to the argued returning result (remarks, page 12), Gaines as modified by Madduri teaches returning results (remote procedure calls, Madduri, col. 6, lines 46-67).

As to the argued parameter (remarks, page 13), Gaines as modified teaches function and parameter (remote procedure calls, Madduri, col. 6, lines 46-67).

Applicant further argued that Priven does not teach passing the object as a parameter (remarks, page 16). The examiner's response is that Priven teaches passing the object as a parameter in that the CIP object is passed to and executed on another system. Priven, fig. 7A; col. 8, lines 12-24; col. 10, lines 6-25.

As to the argued returning the object as a result of invocation, in view of the teachings of communications (client-server, ie, request-response model) of Maddri and Priven (setting up peer to peer communication interfaces by replicating client / server stubs to the second system / throughout network, col. 5, line 49 - col. 6, line 24, col. 6, lines 45-67), returning (response) the object/code as a result of invocation (request) would have been obvious.

It is noted that a stub is typically interpreted as a proxy, a reference, a surrogate or an interface of a remote function/object/service.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (571) 272-3764. A voice mail service is also available at this number. The examiner's supervisor, SPE Meng-Ai An, can be reached on (571) 272 3756. The examiner can normally be reached on Monday - Friday, from 9AM to 5PM. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 7, 2005



**SUE LAO**  
**PRIMARY EXAMINER**